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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,984	02/09/2001	Pratap Malik	2534/101	1655

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EXAMINER
SAUNDERS, DAVID A

ART UNIT	PAPER NUMBER
1644	10

DATE MAILED: 02/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
779,984	MALIK
Examiner	**Group Art Unit**
SAUNDERS	1642

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☑ Responsive to communication(s) filed on 11/14/02.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disp sition of Claims

☑ Claim(s) 1-30 is/are pending in the application.

Of the above claim(s) 1-7, 17, 24-26, 28-30 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☑ Claim(s) 8-16, 18-23, 27 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☑ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☑ Information Disclosure Statement(s), PTO-1449, Paper No(s). 6

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Acti n Summary

Applicant's election without traverse of Group II (claims 8-30) in Paper No. 9 (filed 11/4/02 is acknowledged.

Applicant's election of species in which "the first protein/cell culture product" is a monoclonal antibody and in which "the second protein/compound" is a polyclonal serum antibody is acknowledged. Claims 8-16, 18-23 and 27 correspond to this election of species and are under examination.

Applicant has provided a "List of Figures" (page 3, lines 19-21) but has filed no figure(s). In accord with MPEP 601.01 (F), this application is being examined on the basis that the drawing is not considered essential for establishing a filing date of 2/09/01. Applicant is required to cancel the reference in the specification to the Figures. MPEP 601.01(g).

The disclosure is objected to because of the following informalities: The following misspellings have been noted:

--Perfusion--	at page 4, line 25
--rapid--	at page 4, line 29
--washing--	at page 4, line 29
--as--	at page 5, line 4
--from--	at page 5, line 15
--of--	at page 5, line 16
--monoclonal--	at page 6, line 10
--antibody--	at page 6, line 10

--IgG--	at page 6, line 24
--concentration--	at page 7, line 7
--washed--	at page 7, line 10
--serum--	at page 7, line 12
--is--	at page 9, line 4

Appropriate correction is required.

Claims 8-15, 21-22 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, line 4 "The first compound" lacks antecedent basis. Recitation of "compound" in dependent claim 14, line 2 is confusing because it is not clear how this relates to components recites in the steps of claim 8.

In claim 8, line 6 "the mixture" lacks antecedent basis.

In claims 14 and 21, line 2 of each, "column is" is confusing. Applicant may intend insertion of --which-- after "column".

In claim 22, line 2 "the culture medium" lacks antecedent basis.

In claim 26, "the cell culture protein" lacks antecedent basis.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-12, 14, 16, 18-19, 21, 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aybay et al. (Jour. Immunol. Meth., 233, 77-81, 2000 cited as ref. AB on form 1449).

Aybay et al.'s article is a proper reference under 102(a) because it has a publication date of 1/13/00.

Aybay et al. teach the depletion of IgG from FCS, via affinity chromatography on Protein-G Sepharose. The eluant (designated as "G-FCS") is used to culture cells producing monoclonal antibodies, which are then purified from the eluant culturing medium. Regarding dependent claims 10-11, note that the abstract (line 2) teaches that the depletion was accomplished in less than 80 minutes.

Aybay et al.'s method merely differs from that claimed by virtue of mixing the IgG depleted FCS with culture media, after the affinity chromatography step, rather than prior thereto. However, the instant change in the order of steps is taken as obvious because the end result is the same in either case --i.e. a culture medium containing IgG depleted FCS is used to

culture cells producing monoclonal antibodies. Applicant has shown no unexpected advantage in conducting the steps in the order recited over what is disclosed by Aybay et al.-- e.g. applicant's affinity chromatography step is not conducted more rapidly.

Claims 8-16, 18-23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeng et al. (5,593,822).

Zeng et al., like Aybay et al. noted supra, teach a method of depleting IgG from serum via affinity chromatography on Protein G (col. 9, lines 5-15). They further teach use of the IgG depleted serum in culturing media for the purpose of culturing cells producing monoclonal antibodies, and they teach the purification of monoclonal antibodies from the culture media thus employed. Though the order of steps taught by Zeng et al. differs from applicant's, obviousness is stated according to the same rational set forth above for Aybay et al.

Regarding claims 13 and 20, Zeng et al. teach throughout that either Protein A or G may be used for depleting IgG from serum (e.g. col. 3, lines 7, 12, 19, 29, 38, 49-51; col. 4, line 56).

With respect claims 15 and 22, Zeng et al. teach (col. 9, lines 10-11) a step of sterilization following the step of affinity chromatography.

Regarding claims 10-11, Zeng et al. teach (col. 9, lines 7-9) recycling through a column of Protein G "overnight". This is certainly less than 24 hours and taken to have also been less than 12 hours, since research scientists are noted for working long hours.

Claims 13, 15, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aybay et al. as applied to claims 8-12, 14, 16, 18-19, 21, 23 and 27 above, and further in view of Zeng et al. (5,593,822).

Aybay et al. have been noted supra for teaching depletion of serum via affinity chromatography on Protein G. They do not teach affinity chromatography on Protein A.

Zeng et al. teach a similar method of depletion IgG from serum via affinity chromatography on Protein G (col. 9, lines 5-15). Zeng et al. also teach throughout that either Protein A or G may be used for depleting IgG from serum (e.g. col. 3, lines 7, 12, 19, 29, 38, 49-51; col. 4, line 56). It thus would have been obvious to use Protein A in lieu of Protein G in conducting the affinity chromatography step of Aybay et al., provided one were willing to accept any limitations involved in such a substitution of reagents (Aybay et al. at page 78, para. Spanning cols. 1-2). One would have been willing to accept such limitations in cases where one desired to culture cells producing IgG monoclonal antibodies of a subclass other than IgG1.

Aybay et al. do not mention purification of the eluant from the affinity chromatography column; however, such a step following affinity chromatography of a composition to be employed for cell culturing is conventional, as shown by Zeng et al. (col. 9, lines 10-11). Since one would have expected the affinity chromatography step of Aybay et al. to be as equally likely of introducing microbial contamination as such step of Zeng et al., it would have been obvious to have sterilized what Aybay et al. obtained as their eluant.

The following references are cited as of interest.

Achen et al. (6,383,484) teach production of monoclonal antibodies by cells grown in commercially available IgG depleted serum supplemented medium. The monoclonal antibodies are then affinity purified on Protein-G. See col. 10, lines 52-61.

Stevens (6,410,692) teach the depletion of albumin and immunoglobulin proteins from serum samples, which are then analyzed for their content of various less abundant proteins.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Saunders, Ph.D., whose telephone number is (703) 308-39-76. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan, can be reached on (703) 308-3973. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

David A Saunders

D. Saunders:jmr

January 27, 2003

DAVID SAUNDERS
PRIMARY EXAMINER
ART UNIT 182 1644